

**PATENT COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**  
(Chapter II of the Patent Cooperation Treaty)  
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>730623</b>	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416
International application No. <b>PCT/SG2004/000354</b>	International filing date (day/month/year) <b>26 October 2004</b>	Priority date (day/month/year) <b>27 October 2003</b>	
International Patent Classification (IPC) or national classification and IPC  Int. Cl. <sup>7</sup> <b>C07D 417/04, 407/14, 231/44, 307/52, 333/38, 409/12, 307/68; A61K 31/34, 31/381, 31/415, 31/426, 31/427, 31/421; A61P 35/00</b>			
Applicant <b>S*BIO PTE LTD et al</b>			

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p style="margin-left: 20px;">a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of 15 sheets, as follows:</p> <div style="margin-left: 40px;"> <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).  <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. </div> <p style="margin-left: 20px;">b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or table related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>	
<p>4. This report contains indications relating to the following items:</p> <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> Box No. I      Basis of the report  <input type="checkbox"/> Box No. II      Priority  <input checked="" type="checkbox"/> Box No. III      Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  <input type="checkbox"/> Box No. IV      Lack of unity of invention  <input checked="" type="checkbox"/> Box No. V      Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement  <input type="checkbox"/> Box No. VI      Certain documents cited  <input type="checkbox"/> Box No. VII      Certain defects in the international application  <input type="checkbox"/> Box No. VIII      Certain observations on the international application </div>	

Date of submission of the demand <b>18 July 2005</b>	Date of completion of the report <b>11 October 2005</b>
Name and mailing address of the IPEA/AU <b>AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No. (02) 6285 3929</b>	Authorized Officer  <b>K. LEVER</b> Telephone No. (02) 6283 2263

Form PCT/IPEA/409 (Cover sheet) (January 2004)

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## Box N Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1 (b))
- ☐ publication of the international application (under Rule 12.4)
- ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☐ the international application as originally filed/furnished

☒ the description:

pages 1,2,4,6,8,10-14,17-104 as originally filed/furnished

pages\* 3,5,7,9,15,16 received by this Authority on 18 July 2005 with the letter of 14 July 2005

pages\* received by this Authority on with the letter of

☒ the claims:

pages 106,110,113,114,116-132 as originally filed/furnished

pages\* as amended (together with any statement) under Article 19

pages\* 105,107,107,108,109,109,111,112,115 received by this Authority on 18 July 2005 with

the letter of 14 July 2005

pages\* received by this Authority on with the letter of

☐ the drawings:

pages as originally filed/furnished

pages\* received by this Authority on with the letter of

pages\* received by this Authority on with the letter of

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (specify):
- ☐ any table(s) related to the sequence listing (specify):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (specify):
- ☐ any table(s) related to the sequence listing (specify):

\* If item 4 applies, some or all of those sheets may be marked "superseded."

Box No. 1 Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application

☒ claims Nos: 1-27, 30-76 in part

because:

☐ the said international application, or the said claims Nos.

relate to the following subject matter which does not require an international preliminary examination (*specify*):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos.  
are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos.  
are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for said claim Nos. 1-27, 30-76 in part

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form ☐ has not been furnished

☐ does not comply with the standard

the computer readable form ☐ has not been furnished

☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.

☐ See Supplemental Box for further details.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SG2004/000354

Box No.    Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims 1-76 in part	YES
	Claims	NO
Inventive step (IS)	Claims 1-76 in part	YES
	Claims	NO
Industrial applicability (IA)	Claims 1-76 in part	YES
	Claims	NO

## 2. Citations and explanations (Rule 70.7)

The compounds disclosed in Sheba et al do not fall within the scope of the current claims.

Sheba et al does not suggest compounds of the current claims.

It is therefore considered that claims 1-76 in part are novel and possess an inventive step.

Claims 1-76 are considered to have Industrial Applicability.

Z is a single bond or a C<sub>1</sub>-C<sub>4</sub> hydrocarbon chain containing no more than 1 double or triple bond, optionally substituted with one or more substituents independently selected from the group consisting of C<sub>1</sub>-C<sub>2</sub> alkyl;

5 A is an aromatic ring selected from the group consisting of optionally substituted arylene and optionally substituted heteroarylene, wherein A is not benzimidazole and when Z is a single bond then A is not selected from the group consisting of phenylene and six-membered heteroarylene containing 3 or less than 3 nitrogens;

10 B is an aromatic ring selected from the group consisting of optionally substituted aryl, and heteroaryl and wherein A and B can not both be phenylene and wherein when Z is a single bond then B is not a bicyclic aryl or bicyclic heteroaryl;

wherein A and B are connected via a carbon-carbon bond;

15

R<sub>2</sub> is selected from the group consisting of halogen, alkyl, alkenyl, alkynyl, haloalkyl, haloalkenyl, heteroalkyl, cycloalkyl, cycloalkenyl, heterocycloalkyl, heterocycloalkenyl, aryl, heteroaryl, cycloalkylalkyl, heterocycloalkylalkyl, arylalkyl, heteroarylalkyl, arylalkenyl, cycloalkylheteroalkyl, heterocycloalkylheteroalkyl, heteroarylheteroalkyl, arylheteroalkyl, hydroxy, hydroxyalkyl, alkoxy, alkoxyalkyl, alkoxyaryl, alkenyloxy, alkynyloxy, cycloalkylkoxy, heterocycloalkyloxy, aryloxy, heteroaryloxy, arylalkyloxy, amino, alkylamino, aminoalkyl, acylamino, arylamino, phenoxy, benzyloxy, COOH, COOR<sub>4</sub>, SH, CONHR<sub>4</sub>, NHR<sub>4</sub>, -(CH<sub>2</sub>)<sub>n</sub>NHCOR<sub>4</sub>, NHCOR<sub>4</sub>, NHCOOR<sub>4</sub>, NHCONHR<sub>4</sub>, C(=NOH)R<sub>4</sub>, NHSOR<sub>4</sub>, NHSO<sub>2</sub>R<sub>4</sub>, -(CH<sub>2</sub>)<sub>n</sub>-NR<sub>6</sub>R<sub>7</sub>, alkoxycarbonyl, alkylarninocarbonyl, sulfonyl, alkylsulfonyl, alkylsulfinyl, arylsulfonyl, arylsulfinyl, aminosulfonyl, aminosulfinyl, SR<sub>4</sub> and acyl each of which may optionally be substituted, provided that R<sub>2</sub> does not contain the moiety NHCONHCO or NHCONHSO<sub>2</sub>;

20

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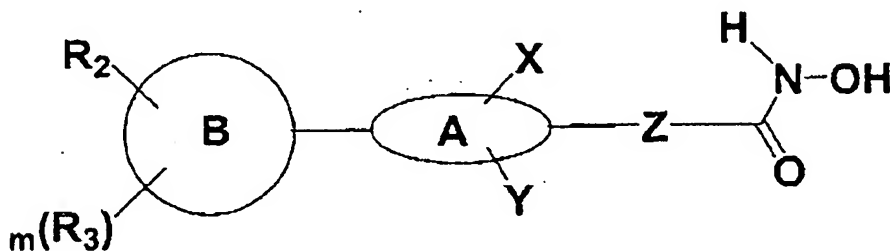
R<sub>3</sub> is selected from the group consisting of H, halogen, alkyl, alkenyl, alkynyl, haloalkyl, haloalkenyl, heteroalkyl, cycloalkyl, cycloalkenyl, heterocycloalkyl, heterocycloalkenyl, aryl, heteroaryl, cycloalkylalkyl, heterocycloalkylalkyl, arylalkyl, heteroarylalkyl, arylalkenyl, cycloalkylheteroalkyl, heterocycloalkylheteroalkyl, heteroarylheteroalkyl, arylheteroalkyl, hydroxy, hydroxyalkyl, alkoxy, alkoxyalkyl, alkoxyaryl, alkenyloxy, alkynyloxy, cycloalkylkoxy, heterocycloalkyloxy, aryloxy, heteroaryloxy, arylalkyloxy, amino, alkylamino, aminoalkyl, acylamino, arylamino, phenoxy, benzyloxy, COOH, COOR<sub>4</sub>, SH, CONHR<sub>4</sub>, NHR<sub>4</sub>, -(CH<sub>2</sub>)<sub>n</sub>NHCOR<sub>4</sub>, NHCOR<sub>4</sub>,

30

35

or a pharmaceutically acceptable salt or prodrug thereof, wherein when A is 2,5-oxazolene and Z is a single bond,  $R_2 = R_3 = H$ , then B is not a phenyl, 4-Cl-phenyl, 4-CH<sub>3</sub>-O-phenyl or 4-NO<sub>2</sub>-phenyl.

- 5 A useful group of compounds within the scope of Formula (I) are those compounds of Formula (Ia)



Formula (Ia)

wherein

10

Z is a single bond or a C<sub>1</sub>-C<sub>4</sub> hydrocarbon chain which may contain 0 to 1 double or triple bonds, unsubstituted or substituted with one or more substituents independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> alkyl;

15

A is an aromatic ring selected from the group consisting of optionally substituted arylene and optionally substituted heteroarylene, wherein A is not benzimidazole and when Z is a single bond then A is not selected from the group consisting of phenylene and six-membered heteroarylene containing 3 or less than 3 nitrogens;

20

B is an aromatic ring selected from the group consisting of aryl and heteroaryl and heteroarylene and wherein A and B can not both be phenylene and wherein when Z is a single bond then B is not a bicyclic aryl or bicyclic heteroaryl;

wherein A and B are connected via a carbon-carbon bond;

25

R<sub>2</sub> is selected from C<sub>1</sub>-C<sub>10</sub> alkyl, alkenyl, heteroalkyl, haloalkyl, alkynyl, aryl, cycloalkyl, heterocycloalkyl, heteroaryl, C<sub>4</sub>-C<sub>9</sub> heterocycloalkylalkyl, cycloalkylalkyl (e.g., cyclopropylmethyl), arylalkyl (e.g. benzyl), heteroarylalkyl (e.g. pyridylmethyl), hydroxyl, hydroxyalkyl, alkoxy, amino, alkylamino, aminoalkyl, acylamino, phenoxy, alkoxyalkyl, benzyloxy, alkylsulfonyl, arylsulfonyl, aminosulfonyl, -C(O)OR<sub>4</sub>, -C(O)OH, -SH, -CONHR<sub>4</sub>.

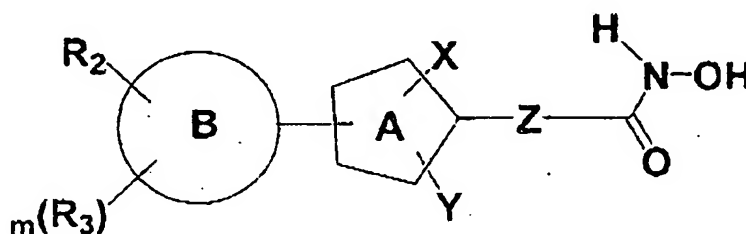
$R_6$  and  $R_9$  are the same or different and independently selected from the group consisting of H,  $C_1$ - $C_6$  alkyl,  $C_4$ - $C_9$  cycloalkyl,  $C_4$ - $C_9$  heterocycloalkyl, aryl, heteroaryl, arylalkyl, and heteroarylalkyl,

5 m is an integer from 0 to 4;

or a pharmaceutically acceptable salt or prodrug thereof, wherein when A is 2,5-oxazolene and Z is a single bond,  $R_2 = R_3 = H$ , then B is not a phenyl, 4-Cl-phenyl, 4- $CH_3$ -O-phenyl or 4- $NO_2$ -phenyl.

10

In further embodiments there are disclosed hydroxamate compounds of Formula (Ib):



Formula (Ib)

wherein

15 Z is a single bond or a  $C_1$ - $C_4$  hydrocarbon chain which may contain 0 to 1 double bond or triple bond, unsubstituted or substituted with one or more substituents independently selected from the group consisting of  $C_1$ - $C_4$  alkyl;

A is an optionally substituted five-membered heteroarylene;

20

B is an aromatic ring which is selected from the group consisting of aryl, and heteroaryl; wherein when Z is a single bond then B is not a bicyclic aryl or bicyclic heteroaryl;

25 wherein A and B are connected via a carbon-carbon bond;

$R_2$  is selected from the group consisting of halogen, alkyl, alkenyl, alkynyl, haloalkyl, haloalkenyl, heteroalkyl, cycloalkyl, cycloalkenyl, heterocycloalkyl, heterocycloalkenyl, aryl, heteroaryl, cycloalkylalkyl, heterocycloalkylalkyl, arylalkyl, 30 heteroarylalkyl, arylalkenyl, cycloalkylheteroalkyl, heterocycloalkylheteroalkyl, heteroarylheteroalkyl, arylheteroalkyl, hydroxy, hydroxyalkyl, alkoxy, alkoxyalkyl,

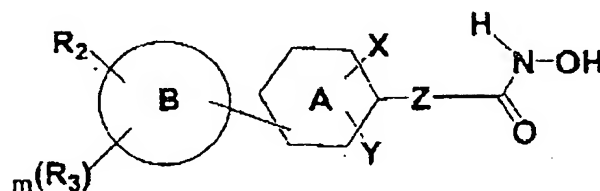
n is an integer from 0 to 6;

m is an integer from 0 to 4;

5 or a pharmaceutically acceptable salt or prodrug thereof wherein when A is 2,5-oxazolene and Z is a single bond,  $R_2 = R_3 = H$ , then B is not a phenyl, 4-Cl-phenyl, 4-CH<sub>3</sub>-O-phenyl or 4-NO<sub>2</sub>-phenyl.

10 In a particularly preferred embodiment of the compounds of Formula (Ib) the B moiety is attached to the 3rd or 4<sup>th</sup> position relative to Z of ring A.

In yet a further embodiment of the compounds of Formula (I) there are disclosed compounds of the Formula (Ic) :



Formula (Ic)

15 wherein

20 Z is a single bond or a C<sub>1</sub>-C<sub>4</sub> hydrocarbon chain which may contain 0 to 1 double bond or triple bond, unsubstituted or substituted with one or more substituents independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> alkyl;

25 A is a six-membered aromatic ring which is selected from the group consisting of optionally substituted arylene or optionally substituted heteroarylene and when Z is a single bond then A is not selected from the group consisting of phenylene and six-membered heteroarylene containing 3 or less than 3 nitrogens;

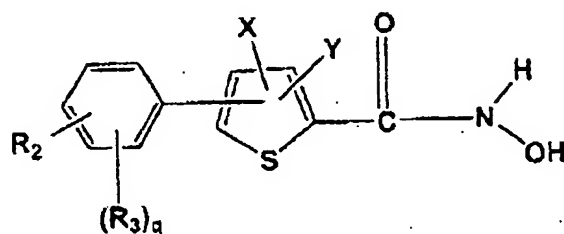
B is an aromatic ring and is attached to the 3rd or 4<sup>th</sup> position relative to Z of ring A selected from the group consisting of aryl, and heteroaryl and wherein A and B can not both be phenylene;

30 wherein A and B are connected via a carbon-carbon bond;



p is preferably 0 or 1, most preferably 0.

In another preferred embodiment the invention provides compounds of Formula (Ig):



Formula (Ig)

wherein q is an integer from 0 to 4, and X, Y,  $R_2$  and  $R_3$  are as described for Formula (I).

$R_2$  is preferably selected from the group consisting of:

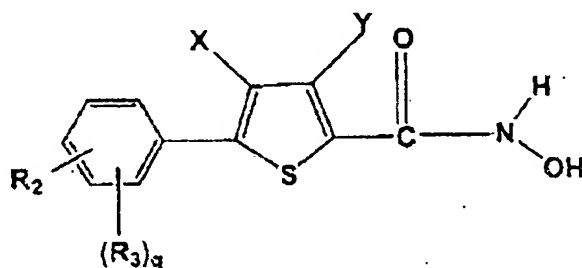
- $NH_2$ ,
- 10 - $(CH_2)_nNHCOR_4$ ,
- $NHSO_2R_4$ ,
- $NR_4$ ,
- $(CH_2)_nNR_6R_7$ ,
- arylalkyl,
- 15 -heteroarylalkyl,

each of which may be optionally substituted

wherein n is an integer from 0 to 6 and  $R_4$ ,  $R_6$  and  $R_7$  are as described for Formula (I), or a pharmaceutically acceptable salt or prodrug thereof.

20 q is preferably 0 or 1, most preferably 0.

In another preferred embodiment the invention provides compounds of Formula (Ih):



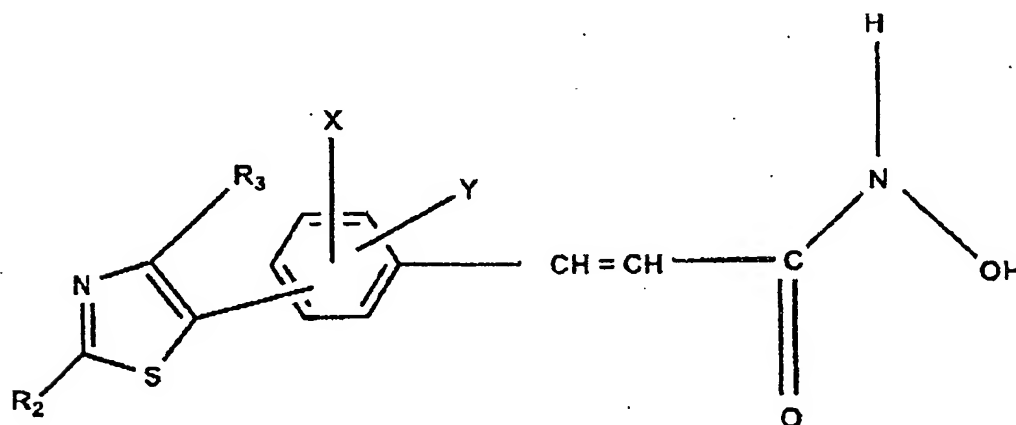
Formula (Ih)

- wherein q is an integer from 0 to 4, and X, Y, R<sub>2</sub> and R<sub>3</sub> are as described for Formula (I).  
R<sub>2</sub> is preferably selected from the group consisting of:
- NH<sub>2</sub>,
  - 5 -(CH<sub>2</sub>)<sub>n</sub>NHCOR<sub>4</sub>,
  - NHSO<sub>2</sub>R<sub>4</sub>,
  - NR<sub>4</sub>,
  - (CH<sub>2</sub>)<sub>n</sub>NR<sub>6</sub>R<sub>7</sub>,
  - arylalkyl,
  - 10 - heteroarylalkyl,
- each of which may be optionally substituted

wherein n is an integer from 0 to 6 and R<sub>4</sub>, R<sub>6</sub> and R<sub>7</sub> are as described for Formula (I), or a pharmaceutically acceptable salt or prodrug thereof.

- 15 q is preferably 0 or 1, most preferably 0.

In another preferred embodiment the invention provides a compound of Formula (II):



Formula (II)

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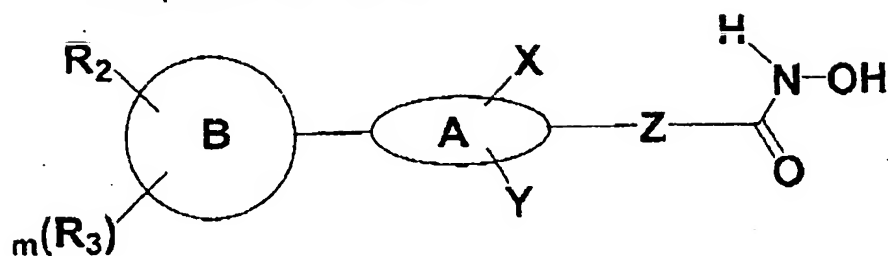
wherein X, Y, R<sub>2</sub> and R<sub>3</sub> are as described for Formula (I)

R<sub>2</sub> is preferably selected from the group consisting of:

- NH<sub>2</sub>,
- 25 -(CH<sub>2</sub>)<sub>n</sub>NHCOR<sub>4</sub>,
- NHSO<sub>2</sub>R<sub>4</sub>,
- NR<sub>4</sub>,
- (CH<sub>2</sub>)<sub>n</sub>NR<sub>6</sub>R<sub>7</sub>.

What is claimed is:

1. A compound of the Formula (I)



Formula (I)

wherein

5

Z is a single bond or a C<sub>1</sub>-C<sub>4</sub> hydrocarbon chain containing no more than 1 double or triple bond, optionally substituted with one or more substituents independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> alkyl;

10

A is an aromatic ring selected from the group consisting of optionally substituted arylene and optionally substituted heteroarylene, wherein A is not benzimidazole and when Z is a single bond then A is not selected from the group consisting of phenylene and six-membered heteroarylene containing 3 or less than 3 nitrogens;

15

B is an aromatic ring selected from the group consisting of aryl, and heteroaryl and wherein A and B can not both be phenylene and wherein when Z is a single bond then B is not a bicyclic aryl or bicyclic heteroaryl;

wherein A and B are connected via a carbon-carbon bond;

20

R<sub>2</sub> is selected from the group consisting of halogen, alkyl, alkenyl, alkynyl, haloalkyl, haloalkenyl, heteroalkyl, cycloalkyl, cycloalkenyl, heterocycloalkyl, heterocycloalkenyl, aryl, heteroaryl, cycloalkylalkyl, heterocycloalkylalkyl, arylalkyl, heteroarylalkyl, arylalkenyl, cycloalkylheteroalkyl, heterocycloalkylheteroalkyl, heteroarylheteroalkyl, arylheteroalkyl, hydroxy, hydroxyalkyl, alkoxy, alkoxyalkyl, alkoxyaryl, alkenyloxy, alkynyloxy, cycloalkyloxy, heterocycloalkyloxy, aryloxy, heteroaryloxy, arylalkyloxy, amino, alkylamino, aminoalkyl, acylamino, arylamino, phenoxy, benzyloxy, COOH, COOR<sub>4</sub>, SH, CONHR<sub>4</sub>, NHR<sub>4</sub>, -(CH<sub>2</sub>)<sub>n</sub>NHCOR<sub>4</sub>, NHCOR<sub>4</sub>, NHCOOR<sub>4</sub>, NHCONHR<sub>4</sub>, C(=NOH)R<sub>4</sub>, NHSOR<sub>4</sub>, NHSO<sub>2</sub>R<sub>4</sub>, -(CH<sub>2</sub>)<sub>n</sub>-NR<sub>6</sub>R<sub>7</sub>, alkoxycarbonyl,

25

cycloalkylalkyl, heterocycloalkylalkyl, arylalkyl, heteroarylalkyl and acyl; each of which may be optionally substituted;

each  $R_8$  and  $R_9$  is independently selected from the group consisting of H, alkyl, alkenyl, alkynyl, haloalkyl, heteroalkyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, cycloalkylalkyl, heterocycloalkylalkyl; arylalkyl, heteroarylalkyl and acyl; each of which may be optionally substituted;

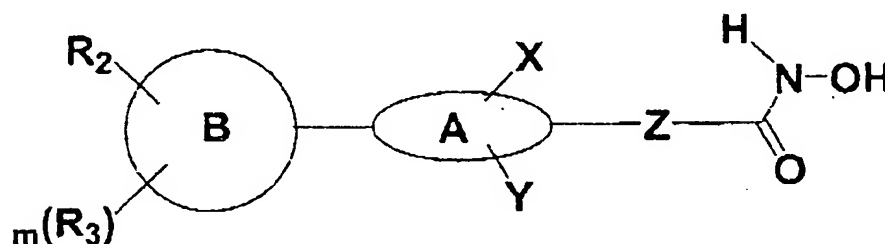
$n$  is an integer from 0 to 6,

$m$  is an integer from 0 to 4;

or a pharmaceutically acceptable salt or prodrug thereof,

wherein when  $A$  is 2,5-oxazolene and  $Z$  is a single bond,  $R_2 = R_3 = H$ , then  $B$  is not a phenyl, 4-Cl-phenyl, 4-CH<sub>3</sub>-O-phenyl or 4-NO<sub>2</sub>-phenyl.

2. A compound according to claim 1 having the Formula (Ia)



Formula (Ia)

wherein

$Z$  is a single bond or a C<sub>1</sub>-C<sub>4</sub> hydrocarbon chain which may contain 0 to 1 double or triple bonds, unsubstituted or substituted with one or more substituents independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> alkyl;

$A$  is an aromatic ring selected from the group consisting of optionally substituted arylene and optionally substituted heteroarylene, wherein  $A$  is not benzimidazole and when  $Z$  is a single bond then  $A$  is not selected from the group consisting of phenylene and six-membered heteroarylene containing 3 or less than 3 nitrogens;

B is an aromatic ring selected from the group consisting of aryl, and heteroaryl

and wherein A and B can not both be phenylene and wherein when Z is a single bond then B is not a bicyclic aryl or bicyclic heteroaryl;

wherein A and B are connected via a carbon-carbon bond;

5

$R_2$  is selected from  $C_1$ - $C_{10}$  alkyl, alkenyl, heteroalkyl, haloalkyl, alkynyl, aryl, cycloalkyl, heterocycloalkyl, heteroaryl,  $C_4$ - $C_9$  heterocycloalkylalkyl, cycloalkylalkyl (e.g., cyclopropylmethyl), arylalkyl (e.g. benzyl), heteroarylalkyl (e.g. pyridylmethyl), hydroxyl, hydroxyalkyl, alkoxy, amino, alkylamino, aminoalkyl, acylamino, phenoxy, alkoxyalkyl, benzyloxy, alkylsulfonyl, arylsulfonyl, aminosulfonyl,  $-C(O)OR_4$ ,  $-C(O)OH$ ,  $-SH$ ,  $-CONHR_4$ ,  $-NHCONHR_4$ ,  $C(=NOH)R_4$ ,  $-C(O)C(O)OR_4$ ,  $C(O)CONHR_4$ ,  $CON(R_5)OR_4$ ,  $COCON(R_4)OR_4$ ,  $NHCOR_4$ , and acyl; each of the above is unsubstituted or optionally substituted with one or more substituents independently selected from the group consisting of: halogen;  $=O$ ;  $=S$ ;  $-CN$ ; and  $-NO_2$ ; and alkyl, alkenyl, heteroalkyl, haloalkyl, alkynyl, aryl, cycloalkyl, heterocycloalkyl, heteroaryl, hydroxyl, hydroxyalkyl, alkoxy, alkylamino, aminoalkyl, acylamino, phenoxy, alkoxyalkyl, benzyloxy, alkylsulfonyl, arylsulfonyl, aminosulfonyl,  $-C(O)OR_5$ ,  $-C(O)OH$ ,  $-SH$ ,  $-C(O)C(O)OR_5$ ,  $C(O)CONHR_5$ ,  $CON(R_5)OR_5$ ,  $COCON(R_5)OR_5$ ,  $NHCOR_5$ , and acyl; wherein  $R_2$  does not contain the moiety  $NHCONHCO$  or  $NHCONHSO_2$ ;

20

$R_3$  is selected from H,  $C_1$ - $C_{10}$  alkyl, alkenyl, heteroalkyl, haloalkyl, alkynyl, aryl, cycloalkyl, heterocycloalkyl, heteroaryl,  $C_4$ - $C_9$  heterocycloalkylalkyl, cycloalkylalkyl (e.g., cyclopropylmethyl), arylalkyl (e.g. benzyl), heteroarylalkyl (e.g. pyridylmethyl), hydroxyl, hydroxyalkyl, alkoxy, amino, alkylamino, aminoalkyl, acylamino, phenoxy, alkoxyalkyl, benzyloxy, alkylsulfonyl, arylsulfonyl, aminosulfonyl,  $-C(O)OR_4$ ,  $-C(O)OH$ ,  $-SH$ ,  $-CONHR_4$ ,  $-NHCONHR_4$ ,  $C(=NOH)R_4$ ,  $-C(O)C(O)OR_4$ ,  $C(O)CONHR_4$ ,  $CON(R_5)OR_4$ ,  $COCON(R_4)OR_4$ ,  $NHCOR_4$ , and acyl; each of the above is unsubstituted or optionally substituted with one or more substituents independently selected from the group consisting of: halogen;  $=O$ ;  $=S$ ;  $-CN$ ; and  $-NO_2$ ; and alkyl, alkenyl, heteroalkyl, haloalkyl, alkynyl, aryl, cycloalkyl, heterocycloalkyl, heteroaryl, hydroxyl, hydroxyalkyl, alkoxy, alkylamino, aminoalkyl, acylamino, phenoxy, alkoxyalkyl, benzyloxy, alkylsulfonyl, arylsulfonyl, aminosulfonyl,  $-C(O)OR_5$ ,  $-C(O)OH$ ,  $-SH$ ,  $-C(O)C(O)OR_5$ ,  $C(O)CONHR_5$ ,  $CON(R_5)OR_5$ ,  $COCON(R_5)OR_5$ ,  $NHCOR_5$ , and acyl; wherein  $R_3$  does not contain the moiety  $NHCONHCO$  or  $NHCONHSO_2$ ;

35

or  $R_2$  and  $R_3$  together with portion of ring B may form a non-aromatic ring fused to B;

X and Y are the same or different and independently selected from the group consisting of: H, halo, C<sub>1</sub>-C<sub>4</sub> alkyl, such as CH<sub>3</sub> and CF<sub>3</sub>, NO<sub>2</sub>, OR<sub>4</sub>, SR<sub>4</sub>, C(O)R<sub>6</sub>, CN, and NR<sub>3</sub> R<sub>6</sub>;

5 R<sub>4</sub> is selected from H, C<sub>1</sub>-C<sub>4</sub> alkyl, heteroalkyl, aryl, heteroaryl, acyl;

R<sub>5</sub> is selected from H, C<sub>1</sub>-C<sub>4</sub> alkyl;

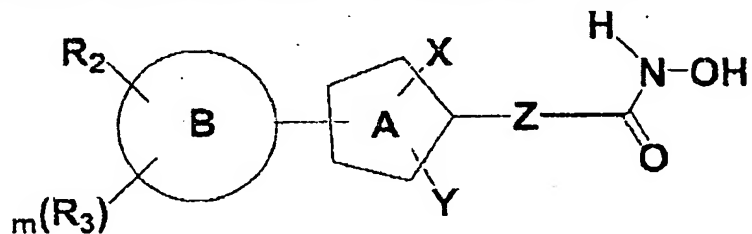
10 R<sub>6</sub> and R<sub>9</sub> are the same or different and independently selected from the group consisting of H, C<sub>1</sub>-C<sub>8</sub> alkyl, C<sub>4</sub>-C<sub>9</sub> cycloalkyl, C<sub>4</sub>-C<sub>9</sub> heterocycloalkyl, aryl, heteroaryl, arylalkyl, and heteroarylalkyl;

m is an integer from 0 to 4;

15 or a pharmaceutically acceptable salt or prodrug thereof,

wherein when A is 2,5-oxazolene and Z is a single bond, R<sub>2</sub> = R<sub>3</sub> = H, then B is not a phenyl, 4-Cl-phenyl, 4-CH<sub>3</sub>-O-phenyl or 4-NO<sub>2</sub>-phenyl.

20 3. A compound according to claim 1 or 2 having the Formula (Ib)



Formula (Ib)

wherein

25 Z is a single bond or a C<sub>1</sub>-C<sub>4</sub> hydrocarbon chain which may contain 0 to 1 double bond or triple bond, unsubstituted or substituted with one or more substituents independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> alkyl;

A is an optionally substituted five-membered heteroarylene;

B is an aromatic ring which is selected from the group consisting of aryl, and heteroaryl; wherein when Z is a single bond then B is not a bicyclic aryl or bicyclic heteroaryl;



$R_5$  is selected from H,  $C_1$ - $C_4$  alkyl;

each  $R_6$  and  $R_7$  is independently selected from the group consisting of H, alkyl, alkenyl, alkynyl, haloalkyl, heteroalkyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, cycloalkylalkyl, heterocycloalkylalkyl, arylalkyl, heteroarylalkyl and acyl each of which may be optionally substituted;

$R_8$  and  $R_9$  are the same or different and are independently selected from the group consisting of H,  $C_1$ - $C_8$  alkyl,  $C_4$ - $C_9$  cycloalkyl,  $C_4$ - $C_9$  heterocycloalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl;

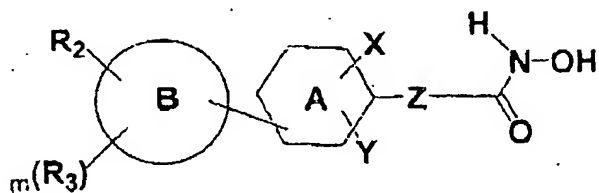
$n$  is an integer from 0 to 6;

$m$  is an integer from 0 to 4;

or a pharmaceutically acceptable salt or prodrug thereof,

wherein when A is 2,5-oxazolene and Z is a single bond,  $R_2 = R_3 = H$ , then B is not a phenyl, 4-Cl-phenyl, 4- $CH_3$ -O-phenyl or 4- $NO_2$ -phenyl.

4. A compound according to claim 1 or 2 having the compound of Formula (Ic):



Formula (Ic)

wherein

Z is a single bond or a  $C_1$ - $C_4$  hydrocarbon chain which may contain 0 to 1 double bond or triple bond, unsubstituted or substituted with one or more substituents independently selected from the group consisting of  $C_1$ - $C_4$  alkyl;

A is a six-membered aromatic ring which is selected from the group consisting of optionally substituted arylene or optionally substituted heteroarylene and when Z is a single bond then A is not selected from the group consisting of phenylene and six-membered heteroarylene containing 3 or less than 3 nitrogens;

B is an aromatic ring and is attached to the 3rd or 4<sup>th</sup> position relative to Z of ring A selected from the group consisting of aryl, and heteroaryl and wherein A and B can not both be phenylene;

5 wherein A and B are connected via a carbon-carbon bond;

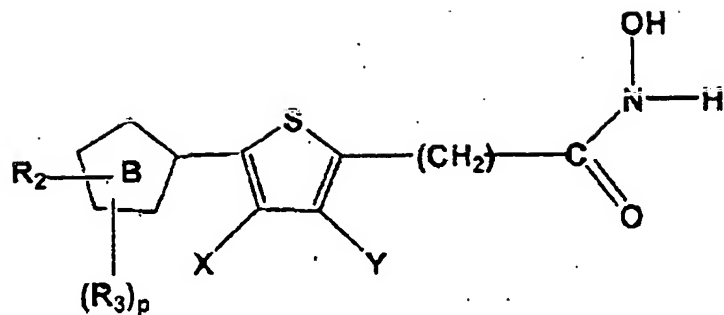
R<sub>2</sub> is selected from the group consisting of halogen, alkyl, alkenyl, alkynyl, haloalkyl, haloalkenyl, heteroalkyl, cycloalkyl, cycloalkenyl, heterocycloalkyl, heterocycloalkenyl, aryl, heteroaryl, cycloalkylalkyl, heterocycloalkylalkyl, arylalkyl, 10 heteroarylalkyl, arylalkenyl, cycloalkylheteroalkyl, heterocycloalkylheteroalkyl, heteroarylheteroalkyl, arylheteroalkyl, hydroxy, hydroxyalkyl, alkoxy, alkoxyalkyl, alkoxyaryl, alkenyloxy, alkynyloxy, cycloalkylkoxy, heterocycloalkylkoxy, aryloxy, heteroaryloxy, arylalkyloxy, amino, alkylamino, aminoalkyl, acylamino, arylamino, phenoxy, benzyloxy, COOH, COOR<sub>4</sub>, SH, CONHR<sub>4</sub>, NHR<sub>4</sub>, -(CH<sub>2</sub>)<sub>n</sub>NHCOR<sub>4</sub>, NHCOR<sub>4</sub>, 15 NHCOOR<sub>4</sub>, NHCONHR<sub>4</sub>, C(=NOH)R<sub>4</sub>, NHSOR<sub>4</sub>, NHSO<sub>2</sub>R<sub>4</sub>, -(CH<sub>2</sub>)<sub>n</sub>NR<sub>6</sub>R<sub>7</sub>, alkoxycarbonyl, alkylaminocarbonyl, sulfonyl, alkylsulfonyl, alkylsulfinyl, arylsulfonyl, arylsulfinyl, aminosulfonyl, aminosulfinyl, SR<sub>4</sub> and acyl; each of which may optionally be substituted, wherein R<sub>2</sub> does not contain the moiety NHCONHCO or NHCONHSO<sub>2</sub>;

20 R<sub>3</sub> is selected from the group consisting of H, halogen, alkyl, alkenyl, alkynyl, haloalkyl, haloalkenyl, heteroalkyl, cycloalkyl, cycloalkenyl, heterocycloalkyl, heterocycloalkenyl, aryl, heteroaryl, cycloalkylalkyl, heterocycloalkylalkyl, arylalkyl, heteroarylalkyl, arylalkenyl, cycloalkylheteroalkyl, heterocycloalkylheteroalkyl, heteroarylheteroalkyl, arylheteroalkyl, hydroxy, hydroxyalkyl, alkoxy, alkoxyalkyl, 25 alkoxyaryl, alkenyloxy, alkynyloxy, cycloalkylkoxy, heterocycloalkylkoxy, aryloxy, heteroaryloxy, arylalkyloxy, amino, alkylamino, aminoalkyl, acylamino, arylamino, phenoxy, benzyloxy, COOH, COOR<sub>4</sub>, SH, CONHR<sub>4</sub>, NHR<sub>4</sub>, -(CH<sub>2</sub>)<sub>n</sub>NHCOR<sub>4</sub>, NHCOR<sub>4</sub>, NHCOOR<sub>4</sub>, NHCONHR<sub>4</sub>, C(=NOH)R<sub>4</sub>, NHSOR<sub>4</sub>, NHSO<sub>2</sub>R<sub>4</sub>, -(CH<sub>2</sub>)<sub>n</sub>NR<sub>6</sub>R<sub>7</sub>, alkoxycarbonyl, alkylaminocarbonyl, sulfonyl, alkylsulfonyl, alkylsulfinyl, arylsulfonyl, arylsulfinyl, 30 aminosulfonyl, aminosulfinyl, SR<sub>4</sub> and acyl; each of which may optionally be substituted wherein R<sub>3</sub> does not contain the moiety NHCONHCO or NHCONHSO<sub>2</sub>;

X and Y are the same or different and independently selected from H, halo, C<sub>1</sub>-C<sub>4</sub> alkyl, such as CH<sub>3</sub> and CF<sub>3</sub>, NO<sub>2</sub>, OR<sub>4</sub>, SR<sub>4</sub>, C(O)R<sub>5</sub>, CN, and NR<sub>6</sub>R<sub>7</sub>;

35 R<sub>4</sub> is selected from H, C<sub>1</sub>-C<sub>4</sub> alkyl, heteroalkyl, aryl, heteroaryl, acyl;

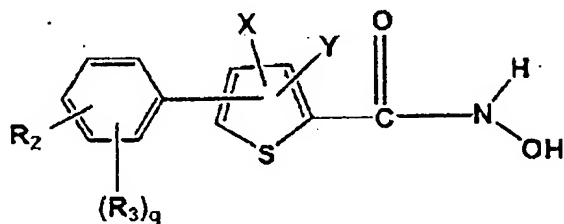
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Formula (If)

wherein B is a 5-membered heteroarylene, p is an integer from 0 to 3 and X, Y, R<sub>2</sub> and R<sub>3</sub> are the same as in claim 1.

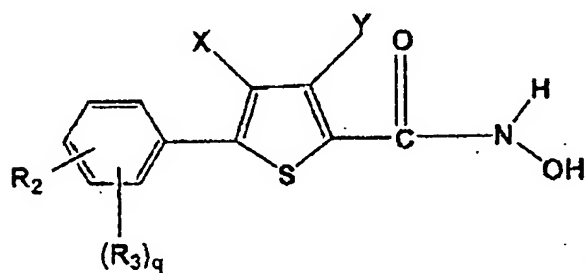
8. A compound according to claim 1 of the Formula (Ig):



Formula (Ig)

wherein q is an integer from 0 to 4 and X, Y, R<sub>2</sub> and R<sub>3</sub> are the same as in claim 1.

9. A compound according to claim 1 of the Formula (Ih):



Formula (Ih)

wherein q is an integer from 0 to 4 and X, Y, R<sub>2</sub> and R<sub>3</sub> are the same as in claim 1.

10. A compound according to claim 1 of the Formula (Ii):

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